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FIRE ADMINISTRATION

ROBERT ADAMSON

Commissioner of the Fire Department

THIS city last year celebrated its three-hundredth birthday, while in a few weeks now we are to celebrate only the fiftieth birthday of the New York fire department as a paid body. There is great significance in this lapse of two hundred and fifty years between the organization of the city itself and the establishment of a paid fire department to protect the lives and property of citizens. It is a fact which is characteristic, I think, of the attitude not merely of the people of the city, but of the people of America as a whole towards protection against fire. Perhaps this attitude accounts for the fact that the fire loss per capita of the United States is eight times that of European countries, and that this fire loss constitutes a drain upon our resources so great as to be little short of a national scandal. We seem to have been extraordinarily slow in conceiving of fire as something to be organized against or prevented. The fire prevention bureau in this city is only three years old, and fifty years ago it was only against great resistance that our paid fire department was organized. Many good citizens thought they saw in the plan a threat against the very pillars of the community. There are always perfectly well-meaning citizens to oppose any change in the existing order. These citizens seem to have been possessed with the primitive notion that putting out fires was the task of the neighborhood and not of the organized government. The bill creating the paid fire department in New York had to be fought all the way to the court of appeals before the commissioners appointed by Governor Fenton to organize the department could begin their work.

The history of the paid fire department is short enough to be encompassed within the experience of many living men. It was with curious interest that, in looking through the minutes of the meeting of the first board of fire commissioners at fire headquarters the other day, I noted there the fact that at the third meeting of

the board a communication was received from the Hon. Chauncey M. Depew, then secretary of state, recommending some man for a minor position in the department.

The fire department of to-day is a very different organization from that of which the first board of fire commissioners assumed control fifty years ago. It was a department of heroic traditions to be sure, traditions which had been handed down through generations of the volunteer force, traditions which inspire the firemen of to-day. But in personnel, in discipline, in equipment, in methods, in training and in effectiveness there can be no comparison between the two.

At present the department is in a transitional stage. The motor is supplanting the horse, the high-pressure water system is supplanting the fire engine, and the gasoline pumping engine is supplanting the old-fashioned steam engine. Soon all of the picturesque and thrill of fires will be gone. Only to-day we opened bids for six new gasoline pumping engines. This is the new type of fire engine, the fuel for which is gasoline instead of coal. It is entirely different in appearance from the steam fire engines which all of us have been accustomed to see at fires, and is, in fact, nothing more than a great gasoline driven pump. We have only one such engine in the fire department now. It is highly improbable that another steam fire engine will be bought. All the pumping engines purchased for use in the future will be of the new type.

Already in the high-pressure water district, which covers all of Manhattan Island south of Thirty-fourth street and the busy central section of Brooklyn and Coney Island, you can see a great fire fought without any engine at all. The water is pumped by a great stationary engine at the riverside, perhaps a mile and a half or two miles away. The fire companies in these districts respond to alarms without engines, the hose is stretched to the high-pressure hydrants, and the pumping station, which has already received the alarm, supplies the needed pressure. As the fire progresses the pressure can be regulated by telephone at the will of the uniformed officer in charge. A few weeks ago I was present at a big fire in Murray street at which many companies worked, but not a single steam engine was present. The street was almost as quiet as it ordinarily is at noonday, and many of the usual evidences of a fire were

absent. But for the network of hose in the street, the crowds that had gathered and the smoke pouring from the top of the building, you could not have told that a fire was in progress. On the first of this month I was present at another third-alarm fire in East Seventeenth street, at which fifteen separate companies worked, and there was not a piece of horse-drawn apparatus there. Ladders are no longer raised by muscular power; they are raised by the touch of a lever, and six hundred pounds pressure is now supplied to firemen without a fire engine.

There has been a corresponding improvement in the mechanical fire equipment inside of buildings. The cellar pipes, which can be extended to almost any length to reach difficult fires in cellars; standpipes, upon which the firemen rely in fighting fires in tall buildings; automatic sprinklers, perhaps the most effective mechanical device for extinguishing and checking fires which has yet been perfected; fire walls with doors which close automatically—these are some of the modern devices for the protection of buildings.

There has been a vast advance also in the training of officers. They are becoming more scientific, and consequently more efficient. Just as the old flat-footed "cop" is disappearing from the police department, so is the old type of fireman disappearing from the fire department. Fire fighting is ceasing to be a matter of brute force, and becoming more and more a matter of science and good equipment. This is largely the result of the fire college at fire headquarters. In classes of forty, every officer in the fire department has now taken a full course in the fire college. They are lectured to by experts in the various branches of their work. Every practical problem which may confront an officer at a fire is the subject of instruction at this college. This year the last class of officers to go through the college finished their course. We are now beginning over and the officers are taking post-graduate courses. Fire chiefs from many American cities have come here and entered this college. There is never a time when there are not two or three fire chiefs in the class.

The new men who come into the department receive careful training by a veteran and experienced officer, Chief Larkin. They are taught how to use the modern implements for fire

fighting; they are seasoned to smoke and to heat; they are taken up to the roof of the old headquarters building, six stories above ground, and taught how to let themselves down by pulleys at the end of a rope; they jump into nets; they rescue each other, and they rescue "Mulligan," the famous lay figure of the recruit school, who has been rescued by more men than any other character in New York. We have also up at the fire headquarters a concrete building, fitted out with all the modern appliances for fire extinguishment, automatic sprinklers and the like, and this little building plays an important part in the training of the recruits.

One of the most marked results of the training of officers is the decrease in the amount of water used at fires. Officers are now taught that water may do as much harm as fire itself, and last year the amount of water used at fires was scarcely more than half that used in former years.

The average loss per fire is being reduced. Last year the per capita loss in this city was the lowest of any year in the history of the city save one. The fire loss for the first three months of this year was nearly \$900,000 less than that for the first three months of last year, a reduction of about 40%. But for exceptional conditions prevailing last year—the abnormal business depression resulting from the war, an abnormally cold winter, and an abnormally dry summer which resulted in nearly five hundred street and brush fires in the suburbs,—it is the confident belief of Chief Kenlon that all records both in the number of fires and in the total loss would have been lowered last year.

As it was, the total fire loss last year was less than that for any year since 1907 save two. The total fire loss in the United States and Canada last year was the greatest in the history of those countries save alone the three years in which the great Baltimore, San Francisco and Chelsea conflagrations occurred. During the five months immediately following the declaration of war in Europe the increase in the number of fires and in the loss was especially noticeable. In the month of November there was an increase in the fire loss in the United States and Canada of \$6,000,000 as compared with the year before, and in December an increase of \$7,000,000. In this city alone during two months

of the fall there was an increase of 1,360 in the number of fires. The connection between the business depression resulting from the war and this increase in the fire loss is beyond question.

The first important order which I issued after becoming fire commissioner was one directing that one man from each of the 295 fire companies in the city be detailed to make housekeeping inspections of buildings. The fire prevention bureau had an accumulation of thirteen thousand complaints on January 1 of last year. Each one of these complaints represented an alleged dangerous condition requiring correction, how dangerous we had no means of telling. I therefore determined upon the housekeeping inspections by the uniformed force. These inspections were not intended to furnish the basis for fire prevention orders, but the firemen were to see that rubbish was not permitted to accumulate, that all fire appliances in buildings were kept in good condition and ready for use in case of fire; that exits were not blocked, that doors of factories and other establishments opened outward, that "No Smoking" signs were displayed, and that other undesirable superficial conditions were called to the attention of owners and rectified. More than a million and a quarter of inspections were made by these firemen last year, and they issued 156,000 verbal corrective orders. Wherever they found a dangerous or serious condition they reported it to the fire commissioner. The constant visits of these firemen and their friendly suggestions are welcomed by citizens. Their presence is a constant reminder to owners and others to exercise care, and I believe that the effect of these inspections in a few years will be shown in a great reduction in the number of fires.

I felt that in this force of five thousand, all of them practical men, there must be a fund of experience which could be of immense value to the fire commissioner. Accordingly, last summer, I announced the offer of a medal to the member of the fire department who during the year made the best suggestion for the management of the force. I have received literally hundreds of suggestions, and the percentage of good ones has been extremely high; in fact, my embarrassment has been in finding the time to put these suggestions into effect. The suggestions which have been offered show that the men are thinking about

their work, that the result of their training is making itself felt, and that they are really alive to the new spirit in the department.

Three months ago we added to the fire-fighting force a rescue squad composed of two officers and eight men. It is located in a company down in Great Jones street, convenient to the busy downtown district, to the shipping center and the east side tenement district. The company responds to fires on special call in a specially designed wagon, which carries all forms of rescue apparatus needed at a fire—pulmotors, lungmotors, life lines, ladders, smoke helmets, and a mechanical device for cutting iron or steel bars. This device is intended for such an emergency as was presented at the Equitable Building fire, when, as you may remember, the president of the safe deposit company was imprisoned behind a steel grated door for nearly two hours, in full view of everybody in the street, while firemen hacked and sawed away desperately to liberate him. The rescue squad could have liberated this man inside of three minutes.

We are now studying the question of extending the length of fire ladders. Although we have the tallest buildings in the world, our truck companies use shorter ladders than are used by firemen in London, where the buildings are much lower in height. In some cities devices have been tried for clearing smoke out of a building and driving it ahead of the firemen so as to enable them to get nearer the fire. This is undoubtedly a development of the future. The smoke-helmet squad has helped us tremendously along this line already, but devices may be perfected which will render unnecessary the risk of sending firemen in masks into dense smoke. The possibility of development along mechanical lines in fire departments is almost limitless. I know of no field more promising for the inventive and resourceful mind. It may not be wholly fanciful to foresee the time when great fires will be fought and extinguished without the use of water at all.

The present fire department has grown up from the village days of New York city, with fire houses located sometimes where they were needed, sometimes where a politician had a piece of land to sell, and in the case of the older houses, without reference to the modern needs of the city. Most of the city fire houses are located according to the needs of the city seventy-five or a hun-

dred years ago. Now motorization has come in and made all the more urgent the necessity for a survey of the location and distribution of the force, and for such changes as modern conditions render possible and expedient. Such a survey we have made within the past year and a half. I appointed a board of officers, and together we studied the field. As a result we were able to discontinue nine companies and to re-locate them in new territory where they were needed.

On January 1 of last year there were twenty new companies to be organized. The new houses were just about completed. It was expected that the commissioner would have to ask the board of estimate for the money for the men for these companies—a total of about \$400,000. By the survey which I have mentioned, by the revocation of details, and by other economies I was able to provide for the organization of the entire twenty companies without increasing the budget a dollar. On the contrary our budget this year is decreased by \$65,000. Therefore, we have been able not only to save the city almost \$500,000, but to distribute the force in such a way as to make it much more efficient. We have companies in the department which respond to less than ten fires a month. It is an exceedingly busy company which responds to as many as two or three fires a day. The average per company for the city would probably be between 20 and 25 fires per month. So, in the changes which have been made we have taken into consideration the necessity at a given location for a fire company as shown by the work actually done by that company.

I might mention a great many other things which I have in view for the development of the force and which I am working out with Chief Kenlon and his splendid aides. We are to introduce in a short time a new system of physical exercises for the men, to be followed out fifteen minutes each day in the fire houses. At present a very high physical standard is required of the men upon entering the department, but in many of the less active companies, where the runs are infrequent, the men become short-winded and too stout. We have prepared a brief manual of physical exercises which is to be part of the daily routine of each company. The purpose is to keep the men in good condition. Another thing

which we have in view is a new method of differentiating between the excellent fireman and the one who shirks. At present the excellent fireman, who goes wherever his commander sends him, who takes the line right up to the fire and holds it there no matter what the danger and the risk, who takes big chances with his life, and who, under all circumstances, is relied upon by his captain to do his work faithfully, stands upon precisely the same footing as the shirker who cannot be relied upon and who is continually offering excuses as to why he did not do something he should have done. In every company there are three or four men who are the salt of the company, who bear the brunt of the work and the danger, and these men are perfectly well known to the captains, to the battalion chiefs and the other high officers. The shirkers are also perfectly well known. Yet it is perfectly possible at present for the two men to enter a civil service examination upon precisely the same footing, and if the shirker happens to have a little better education than the other man, and has managed to escape charges, it is entirely possible for him to come out ahead of the good man in the examination. We are working out now a system of ratings for firemen by which the proper grading will be given to the best man, and the civil service commission has promised to recognize those ratings in the examination. I believe that nothing that could be done in connection with the records of firemen will do more to stimulate and encourage the good fireman than this. Such a system will serve to separate the good man from the shirker, whereas at present they all stand upon a dead level.

In all of these problems, as I have said, I have had the splendid help of Chief Kenlon and other experienced officers of the fire department. The city is exceedingly fortunate in having as the head of the uniformed force a man who has come up through the ranks, filling in turn every grade and every position in the department from the bottom to the top. He is a man not only of practical experience, but of scientific education and training, an engineer and a general. With the aid of these men it is my hope that before the end of the present administration we shall be able to make tremendous strides in putting the fire department forward in all branches of training, equipment and practise.

This, in brief, is the work of the uniformed force, the fire fighters. The fire department includes many other activities. For example, we have a fire prevention bureau with a force of more than 200 men. The work of this bureau is divided into several branches. First, there is a division of fire appliances, which inspects buildings and recommends orders for the installation of necessary fire extinguishing equipment. Next, there is a division of public assembly, which consists of a force of men engaged in inspecting theaters, moving-picture theaters, dance halls and places of public assembly generally. Every theater, every moving-picture place and every dance hall has to have a clean bill of health from the fire department before the licensing authorities will issue them permits. Next, there is a division of combustibles, which bears perhaps the greatest responsibility of all, because under its jurisdiction comes the inspection, regulation and licensing of all the places in the city where combustibles or explosives are stored and the examination and licensing of persons who handle those combustibles and explosives. Last year upwards of 20,000 permits were granted by this division. Under the law, every garage, every drugstore, every oil storage plant, every dynamite magazine, every chemical establishment, every film exchange, every place where celluloid is stored or combustibles or explosives of any kind are sold, must be inspected by this division. When we consider that there are in New York, used in art and industry, more than enough explosives to destroy the combined armies and fleets of the warring European nations, some idea of the magnitude of the work of this bureau can be obtained. Recently the construction of the subway, requiring as it does the use of a great amount of dynamite in the very heart of the city, has placed a great responsibility upon this bureau. The greatly increased use of gasoline, not only by automobiles, but in industry generally, has also increased our work. Perhaps it is not generally known that one of the greatest hazards we have is represented by moving-picture film exchanges. These films are not only highly combustible, but under certain conditions highly explosive. The industry is comparatively new and the world is constantly learning more and more about it. Some idea of the great danger involved in the storage of films is conveyed by the fact that last

year within a short radius of New York city moving-picture film fires causing a damage of nearly \$9,000,000 occurred.

The fire prevention bureau is only a little more than three years old. It was created as a result of the great Triangle shirt-waist fire in which 147 lives were lost. Perhaps the public supposed that after that great horror and the public sentiment which it aroused it would not be difficult for the new fire prevention bureau to secure prompt compliance with its orders, but that was not the case. These orders were resisted, some of them all the way to the court of appeals, and there was consequently a delay of more than a year in establishing the authority of the bureau in respect to certain important fire extinguishing devices. It was only in May of last year that the authority of the fire commissioner to order automatic sprinklers in certain buildings was upheld by the court of appeals.

The automatic sprinkler is perhaps the most effective mechanical device which has yet been perfected for the extinguishment of fires. It consists of water pipes stretched along the ceiling with openings at stated intervals through which the water may flow in case of fire. The water is liberated when the heat fuses the soft metal which closes the openings, the fusing taking place at the temperature of 155 degrees. The history of automatic sprinklers in this city is that no life has been lost in a building in which they were installed and that no great fire has ever occurred in such a building. The sprinklers either extinguish the fire entirely, or hold it in check until the firemen arrive. At the same moment that the water begins to flow through the sprinklers, an automatic alarm is sent in, and in most cases the firemen find the fire extinguished when they arrive.

But, as I have said, we have found great difficulty in securing compliance with orders for the installation of sprinklers. Early last year a fire occurred in a great factory on East Ninety-ninth street, a fire which lasted practically the whole afternoon, and engaged the services of something like twenty fire companies. In the fire no less than 50 firemen were overcome. Upon investigation I discovered that a sprinkler order had been issued against this building two years before and had been ignored. We at once cast about to see whether or not some means could not be

found for penalizing the owner of that factory for ignoring our order. I was finally advised by Mr. deRoode, the special assistant corporation counsel assigned to the fire department, that under two sections of the charter we stood a good chance of collecting at law the cost to the fire department of extinguishing that fire. Those two sections had never been availed of by the city before and we were laughed at when we proposed to bring suits under them. But we brought suit for \$1,500 and those who laughed were the first to congratulate us when, a few months later, the appellate division of the supreme court, by unanimous decision, upheld our contention. The very next day another firm against which a similar suit had been brought sent its representative to headquarters with a check covering the expense of the fire department in that particular fire. So by this decision there was placed in our hands a weapon which I believe will be tremendously effective in compelling compliance with fire department orders. The principle established by that decision was that the fire department can collect the cost of extinguishing fires if it can be shown that the fire was caused by "wilful or culpable negligence."

Personally, I feel that this principle should be carried further, that the law should provide that the owner of a building may collect for damage done by fire from the person responsible, through carelessness or negligence, for starting such fire. Under the Code Napoleon the man upon whose premises a fire starts is presumptively at fault, and the burden of proof is upon him to show that he was not responsible for causing the fire. If a fire starts upon a man's premises and is communicated to the premises of that man's neighbor, the neighbor can bring suit for damages unless the man can show that the fire was due to no fault of his own or his servants or agents. I see no sound reason why we should not have such a law here. If we had, I feel sure that the number of fires occurring in this city would go down amazingly over night. If men have to go into their pockets to pay the cost of their carelessness and negligence, you may be sure that they are going to be more careful.

In the work of the fire prevention bureau we have made publicity and education a foremost feature. We have sought in every way possible to show people how fires occur; through what acts of carelessness they are started and how they may easily be prevented.

We feel that the number of fires which are not preventable is almost negligible. In fact it can scarcely be said that no fire is unpreventable except those due to earthquake or lightning.

Last year we had 14,425 fires in this city and of this number more than 9,000, or exactly 64%, occurred in places in which people lived, the homes of the people, private residences, tenement houses, hotels and boarding houses. And they occurred from causes which, as ascertained by our fire marshals upon investigation, were due to ordinary acts of carelessness. Of these fires 1,674 occurred in cellars; 478 in chimneys; 1,031 in parlors and dining rooms; 357 in closets; 189 in bathrooms; 190 were awning fires; 105 occurred in dumbwaiters and 215 occurred under stoops, porches and in areaways. And all of these fires were carelessness fires.

Investigation by our fire marshal shows that carelessness with cigars, cigarettes and pipes caused 1,342 fires; carelessness with candles and tapers, 523; children playing with matches or fire, 755; careless use of matches, 287; overheated stoves, boilers and ranges, 958; defective insulation, 471; bonfires, brush fires and rubbish fires, 1,491. We have issued thousands of circulars pointing out these facts and warning and admonishing the people. It is exceedingly difficult, however, to impress grown-up people with facts like these until they have been hit by some personal experience of their own, so we have begun with the rising generation. We have prepared a text book on fire prevention, and through the co-operation of President Churchill and Superintendent Maxwell fire prevention is now being taught in every class in the public schools of this city. It is our hope that in a few years, perhaps even this year, we may begin to reap the advantage of this training.

This indicates the great task which is before the fire department—the prevention of fires. Fire prevention is not, as many people suppose, merely a matter of fireproofing buildings. That is fire protection which, in the case of a fire occurring, will limit the loss of property and the loss of life. But almost as many fires will occur in fireproof buildings if the people who occupy those buildings are careless with matches and lights and allow rubbish and combustible materials to accumulate.

It is the great task of the next decade in the fire department to take the people into co-operation in the prevention of fires. We are going ahead as well as we can with a limited force to make buildings in this city safe, but what can 200 men do in a vast city like this with more than 375,000 buildings, and a population of six million? It would take years and the complete re-building of many parts of the city to make our buildings fireproof, as we understand the term to-day. And even when that work is done, its effectiveness will be lost unless the people themselves co-operate.

Fire prevention is really the work of the people of the city. A handful of inspectors can not do it all. I should like to see every man, woman and child in this city a fire prevention aide, and when we have that help we shall have such a reduction in fires as to enable us to get along with much fewer firemen than we need to-day.

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